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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Josef Otto RETTENMAIER

Title: ANCILLARY FILTERING
AGENT

Appl. No.: 09/380,731

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Art Unit: 1723

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DECLARATION OF DR. EBERHARD GERDES

I, Dr. Eberhard Gerdes, a citizen of the Federal Republic of Germany, residing at Dürerstraße 9, D-73479 Ellwangen, Germany, declare and state that:

1. I graduated from 1985 to 1991 with a masters degree "chemistry" at the University of Karlsruhe, Germany and from 1992 to 1994 with PhD "chemistry" at the University of Karlsruhe, Germany.

2. From 1995 to 1996, I worked for J. Rettenmaier & Söhne GmbH & Co. as a developer in the R&D department. From 1996 to 1998, I worked for J. Rettenmaier & Söhne GmbH & Co. as a Product Manager Filtration in the sales department. Since 1999, I have worked in the research and development department of J. Rettenmaier + Söhne GmbH & Co. KG as a Business Unit Manager Filtration.

3. My special field of research is filtration of liquid systems, with particular focus on the application of cellulosic components in filter aids.

4. Based on my 10 years of experience in filtration technologies, I have a good understanding of how a person of ordinary skill in the art would think and what he

would do when trying to solve a particular problem.

5. I have reviewed and understand above-captioned application SN 09/380,731.

I have also reviewed and understand U.S. Patent No. 5,866,242 to Tan et al.

6. In my opinion, a person of ordinary skill in the art would not look to Tan et al. for solutions for filter material. Tan et al. relates to an absorbent material for use in absorbent articles (such as disposable diapers, feminine hygiene products, and incontinence devices), the purpose of which is quite opposite to the purpose of a filter material. The purpose of an absorbent material is to maintain all of a liquid volume in the interior of the absorbent article. In contrast, the central purpose of a filtering material is to let one substance, such as liquid, pass through the material and to prevent another substance, such as separated particles, from passing through the material. In other words, the filtering material only retains the separated solid particles but lets pass the liquid, directly in contrast to an absorbent material.

7. An integral characteristic of the absorbent material disclosed in Tan et al. is the presence of SAP (superabsorbent polymer), which is responsible for the absorbing properties of the absorbent material. The presence of SAP is a central features to the disclosure of Tan et al.

8. This feature, however, makes it impossible to use the absorbent material of Tan et al. for filtering purposes. If water were introduced into the absorbent material of Tan et al., the SAP would swell immediately and, as it is water-insoluble, would prevent the transfer of water through the absorbent material. Further, because the invention disclosed in Tan et al. is based on SAP, removing SAP from the absorbent material disclosed in Tan et al. would contradict the teaching of Tan et al. Accordingly, one of ordinary skill in the art would not be motivated to do so.

9. I also have read and understand the Office Action mailed October 31, 2001, as

well as U.S. Patent No. 4,288,462 to Hou et al. Paragraph 3 of the Office Action states:

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,288,462 (hereinafter referred to as Hou et al '462) in view of Tan et al. Hou et al '462 teaches filter media sheet comprising cellulose fibers of different pulps or differently beaten pulps and perlite and silica (i.e. kieselguhr) (see col. 3, line 54 - col. 4, line 26; col. 5, line 6 - col. 6, line 36; col. 10, line 64 - col. 11, line 12). Hou et al. '462 teach that filter sheet made of cellulose fibers are free of extractables and are free of discoloration (see col. 3, lines 59-69). Claims 1-12 essentially differ from the filter media sheet of Hou et al. '462 in reciting claimed treated finely divided wood particles. Tan et al teach wood pulp fibers subjected to a dilute alkali metal salt solution at a temperature of from 15 to about 60 degrees Celsius and including organic particulates and filter active fractions (see col. 3, line 66 - col. 4, line 7; col. 4, line 58 - col. 5, line 12). Cellulose pulp contains cellulose fibers, and cellulose fibers have cellulose particles. Cellulose is derived from wood particles. It would have been obvious to a person of ordinary skill in the art to treat wood particles to produce cellulose pulp for its use in a filter media sheet in Hou et al '462.

I disagree with this analysis.

10. Hou et al '462 is directed to a filter media sheet, whereas the subject matter of SN 09/380,731 is directed to a filter aid comprising finely divided wood particles, i.e., loose particulates, that can be used to form prefloat filter layers. The sheet product disclosed in Hou et al. '462 is like a sheet of paper, that is, a sheet of coherent material which can be cut to the necessary form and dimension. The filter aid claimed in SN 09/380,731, on the other hand, includes loose wood particles that are intended to be deposited on a support surface, in order to build up a filter layer. Although both materials are in the form of a layer when in operation, whether the materials are in a flat coherent paper sheet or in heaped-up layer of loose, finely divided particles are very important for filtration properties. It is impossible to obtain a usable beverage filtration with a paper sheet. The layer of loose, finely divided filter particles, however, consolidates to a layer with greater filtration lengths, which enables separation of very fine particles, such as those present in beverages and the like.

11. In my view, a person of ordinary skill in the art would not conclude that a

filter sheet, such as filter paper, would act similarly to a filter aid comprising finely divided wood particles (for example, for use in a prefloat filter layer) during filtration. This conclusion would simply be unprofessional given their very different structures, one being a self-coherent sheet and the other being a loose particulate material layer.

12. That the conclusion is unprofessional is even more true because the solution for obtaining a filter media free of extractables and free of discoloration, according to Hou et al. '462, involves the use of an anionic charge modifier. See Hou et al. '462, col. 3, lines 54-64. The use of an anionic charge modifier is responsible for the success of the filter media sheet disclosed in Hou et al. '462. A person of ordinary skill in the art following the teaching of Hou et al. '462 would use adjuncts, for example, an inorganic anionic colloidal silica charge modifier (see claim 1 of Hou et al. '462), in the filter media and would end up with a completely different product than the invention of SN 09/380,731, which does not use additional chemical substances such as charge modifiers. Further, nothing in Hou gives any indication that particularly treated (with a dilute alkali solution at a temperature below 100°C and at atmospheric pressure) finely divided wood particles should be used. This is required for the invention, and nothing in Hou '462 leads in this direction.

13. The invention of claim 1 of SN 09/380,731 simply comprises using finally divided wood particles that have been treated with a dilute alkali solution in a manner that leaves the wood as wood. That is, the treatment is minimal and yet allows filtration of difficult filtrates, like beverages, with practically no extraction from the treated wood.

14. I have read and understand U.S. Patent No. 4,488,969 to Hou. Hou '969 would not lead a person of ordinary skill in the art to the invention of SN 09/380,731. As can be seen from claim 1 of Hou '969, there is provided a "self-supporting fibrous matrix," but not finally divided wood particles treated in a certain way, as required by claim 1 of SN

09/380,731. An essential teaching of Hou '969 is the presence of an organic polycationic resin and an organic polyanionic resin. A skilled person would follow this recommendation and try to use these components in order to attain the objects mentioned in Hou '969, column 3, lines 43 to 58. Because the specially treated wood particles of claim 1 of SN 09/380,731 are not mentioned by Hou '969, Hou '969 teaches a completely different product than the present invention. If a person of ordinary skill in the art were to follow the teaching in the '969 patent, he would be led away from the present invention.

15. Finally, I have read and understand U.S. Patent No. 4,599,240 to Thompson. Paragraph 5 of the Office Action states that claim 1 of SN 09/380,731 would be obvious over Thompson. I disagree. The subject matter of Thompson can be summarized as follows:

The process of the present invention is characterized by subjecting a variety of certain agricultural by-products having little commercial value, such as, for example, soybean hulls, to a series of separate steps utilizing certain chemical treating to effect a solubilizing and removal of the non-cellulosic components of the by-product agricultural material to produce residue solids which consist essentially of cellulose. The cellulose residue solids are subjected to specified purification procedures and thereafter dried to produce a short, fine fibered cellulose which may be processed to a fine powdered state suitable for use as a component part in a wide variety of edible or otherwise useable products by humans, an example of such a product being a low calorie bread.

16. The wood particles of the invention of SN 09/380,731 are not treated to such an extent that they transform to a purified, fine fibered cellulose, as taught in Thompson. Instead, treatment of the wood particles in SN 09/380,731 is only carried to a certain degree, such that the wood character is maintained.

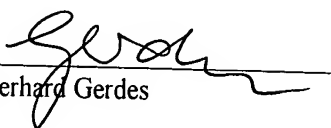
17. In contrast, the starting material in Thompson is not wood. Column 3, lines 51-55 of Thompson reads, "The raw materials to be employed in the process of the present invention for the production of purified cellulose may be any relatively non-ligneous, edible agricultural by-products having a significant alpha cellulose content present therein."

Further, in column 4, lines 25-28, Thompson states that "The process of the present invention is not applicable on a practical basis to wood, stalk portions of plants, or even the husk portions of various cereal grains." (Emphasis added.) A person of ordinary skill in the art would not be motivated by Thompson to take wood as a raw material and to treat it so that it remains wood and does not become something like purified cellulose. This would be contrary to the disclosure of Thompson. Besides, one of ordinary skill in the art would not make conclusions as to filtration properties of a product according to Thompson, which teaches a purified and sterile cellulose powder suitable for use as an additive for products to be consumed by humans (see column 3, lines 8-10), where filtration properties are not relevant at all.

18. In conclusion, based on my 10 years of experience in the field of cellulosic filtering aids, I am of the opinion that one of ordinary skill in the art would not find claim 1 obvious in light of the references, and combinations of references, suggested in the Office Action.

I declare under penalty of perjury under the laws of the United States of America that all statements made herein of my own knowledge are true and correct, and that all statements made on information and belief are believed to be true and correct.

Date: Holzmuhle, 09/10/02


Dr. Eberhard Gerdes